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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,048	01/19/2001	Frank Carr	41601/PBH/B600	1888

7590

06/19/2003

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EXAMINER

HARVEY, DAVID E

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 06/19/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/766,048

Applicant(s)

CARR ET AL.

Examiner

DAVID E HARVEY

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-27 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-27 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. **Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rotzol [US Patent #5,737,035] in view of Rodal et al. [US # 5,564,098], Scheinberg [US Patent #5,625,307], "A 3 CHIP GaAs DOUBLE CONVERSION TV TUNER WITH 70 dB IMAGE REJECTION" by Ducourant et al.**

As is illustrated in figure 6, Rotzol disclosed a single IC chip receiver (@110) which comprised:

- a) a substrate (an inherent part of the IC chip);
- b) a first mixer which performs up-conversion (@408), wherein the mixer is disposed on the substrate (again, an inherent part of the IC chip);
- c) a filter coupled to the output of the mixer (@509); and
- d) a second mixer which performed down-conversion (@510)

[note lines 50-58 of column 3]

Claim 10 differs from the showing of Rotzol only in the filter (@ 509) in Rotzol was not described as a differential filter.

Within the RF receiver art, it was notoriously well known to have implemented the circuitry components using differential/balanced circuitry. This is evidenced, for example, in the showings of Rodal et al. [US # 5,564,098], Scheinberg [US Patent

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#5,625,307], and the article "A 3 CHIP GaAs DOUBLE CONVERSION TV TUNER WITH 70 dB IMAGE REJECTION" by Ducourant et al. Implementing the components of the receiver with differential/balanced circuitry had the known advantage canceling/reducing the RF noise was transmitted that via between components (i.e. *leakage*).

It would have been obvious to one of ordinary skill in the art to have implemented the components of the single chip receiver that was described by Rotzol using differential/balanced circuit components. As noted above, such an implementation was known to have been advantageous in that it reduced RF noise (i.e. the motivation for the combination).

3. Claims 19, 25, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rotzol [US Patent #5,737,035] in view of Rodal et al. [US # 5,564,098], Scheinberg [US Patent #5,625,307], "A 3 CHIP GaAs DOUBLE CONVERSION TV TUNER WITH 70 dB IMAGE REJECTION" by Ducourant et al. For the same reason that was set forth for claim 10 above.

4. Claims 11-18, 20-24, 26, 27, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rotzol [US Patent #5,737,035] in view of Rodal et al. [US # 5,564,098], Scheinberg [US Patent #5,625,307], "A 3 CHIP GaAs DOUBLE CONVERSION TV TUNER WITH 70 dB IMAGE REJECTION" by Ducourant et al. for the same reason that was set forth for claims 19, 25, and 32 above. The following is noted:

A) Claim 11 indicates that the recited "differential filter" is implemented as a "SAW" filter. While not specified in applied prior art, the selection of a "SAW" filter implementation (@ 16) would have been an obvious choice of design given the known advantages provided by such an implementation (e.g. such as the short wavelength of acoustic waves which allows the size of the filter to be reduced).

B) Claim 12 indicates that the filter is located off-chip. Due to the difficulty of implementing the filter on-chip (i.e. resulting in low/lower yields), it would have been obvious to one skilled in the art to have moved the filter in Rotzol off chip. Such is evidenced by the showing of Barber:

1) that a "single chip" radio was in fact a widely recognized ultimate goal of those skilled in the telecommunications art [note lines 19-21 of column 1]; and

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2) that it was known to have disposed the off-chip filters of RF receiving circuitry on-chip in pursuit of this goal [lines 35-66 of column 15].

C) Claim 14 indicates that the substrate is processed using CMOS technology. While not described in Rotzol, the selection of a "CMOS" technology would have been an obvious choice of design given the known advantages provided by such a CMOS implementation (e.g. such as the low power consumption, ease of fabrication, etc,...).

D) With respect to the limitations of claims 22 and 30, see element (406) and/or element (422 in figure 6 of Rotzol).

5. EP # 0,076,153 to Vance, DE #3,007,907 to Schaller (figure 5), and JP 6-69829 to Hitachi, LTD have all been cited because they illustrate integrated receiver structure. JP 9-181628 to Sangyo has been cited as being illustrative of conventional CATV receiver structure (e.g. figure 3).

6. The examiner notes that the IDS filed 4/15/2003 was not considered because a copy of the cited documents is not fo record

7. Any inquiry concerning this communication should be directed to **David E. Harvey** whose telephone number is **(703) 305-4365**. The examiner can normally be reached Monday-Friday between the hours of 9:30 AM and 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. John W. Miller, can be reached at (703) 305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231


or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. Sixth Floor (Receptionist).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose number is (703) 306-0377.

DEH 6/03


DAVID E. HARVEY
PRIMARY EXAMINER